Next Generation Simulation (NGSIM) Lankershim Boulevard Dataset

Identification Information

Citation

Citation Information

Originator: FHWA
Publication Date: 2016
Title: NGSIM Program Lankershim Boulevard data
Edition: Version 1
Geospatial Data Presentation Form: NAD83 – California State Plane Coordinate System, Zone 5

Publication Information

Publication Place: Washington, D.C.
Publisher: U.S. Department of Transportation Intelligent Transportation Systems Joint Program Office (JPO)
Online Linkage: https://www.its-rde.net/

Description

Abstract: The Next Generation Simulation (NGSIM) program was initiated by the United States Department of Transportation (US DOT) Federal Highway Administration (FHWA) in the early 2000's. The program developed a core of open behavioral algorithms in support of traffic simulation with a primary focus on microscopic modeling, including supporting documentation and validation data sets that describe the interactions of multimodal travelers, vehicles and highway systems, and interactions presented to them from traffic control devices, delineation, congestion, and other features of the environment. NGSIM stakeholder groups identified the collection of real-world vehicle trajectory data as important to understanding and researching driver behavior. The Lankershim Boulevard dataset was one of several detailed, high-quality datasets collected under the NGSIM effort that supported the development of algorithms for driver behavior at microscopic levels.

NGSIM program researchers collected detailed vehicle trajectory data on Lankershim Boulevard in the Universal City neighborhood of Los Angeles, CA, on June 16, 2005. The study area, which consisted of bidirectional data of the three to four lane arterial segments and complete coverage of three signalized intersections, was approximately 500 meters (1,600 feet) in length. These data were collected using five video cameras mounted on the roof of a 36-story building located adjacent to the U.S. Highway 101 and Lankershim Boulevard interchange in the Universal City neighborhood. NG-VIDEO, a customized software application developed for the NGSIM program, transcribed the vehicle trajectory data from the video. This vehicle trajectory data provided the precise location of each vehicle within the study area every one-tenth of a second, resulting in detailed lane positions and locations relative to other vehicles. A total of 30 minutes of data are available in the full dataset, which are segmented into two 15-minute periods (8:30 a.m. to 8:45 a.m. and 8:45 a.m. to 9:00 a.m.). These periods represent primarily congested conditions on the arterial. In addition to the vehicle trajectory data, the Lankershim Boulevard dataset also contains computer-aided design and geographic information system files, aerial ortho-rectified photos, loop detector data, processed videos, signal timings, traffic sign information and locations, weather data, and aggregate data analysis reports.

Purpose: The NGSIM program developed a core of open behavioral algorithms in support of traffic simulation with a primary focus on microscopic modeling, and collected high-quality primary traffic and trajectory data from Lankershim Boulevard to support the research and testing of the new algorithms.

Time Period of Content

Time Period Information

Range of Dates:
Beginning Date: 20050613
Ending Date: 20050616

Currentness Reference:
Ground condition (i.e., the previous dates refer to the time the information was collected)

Status

Progress: Complete
Maintenance and Update Frequency: None planned

Spatial Domain

Bounding Coordinates (Lankershim Boulevard)
West Bounding Coordinate: -118.363
East Bounding Coordinate: -118.360
North Bounding Coordinate: 34.143
South Bounding Coordinate: 34.137

Keywords

Theme
Theme Keyword: NGSIM
Theme Keyword: Simulation Data
Theme Keyword: Arterial Data
Theme Keyword: Behavioral Algorithm

Place
Place Keyword: Universal City
Place Keyword: Los Angeles
Place Keyword: Southern California

Temporal
Temporal Keyword: 2005

Access Constraints:

To access the data set, users must register through the USDOT Research Data Exchange (RDE) portal (https://www.its-rde.net/). The registration process will include a request for contact information and agreement to terms of use for the data What information is optional versus mandatory for registration has not been finalized ; however in order to encourage broad access and use, mandatory information will be kept to a minimum and ease of use maximized. See the RDE Terms of Use and Data Privacy Policy on how registration information is kept secure and for uses only applicable to the RDE administration.

User Constraints:

Those who use data and data processing tools distributed by the Research Data Exchange have the following responsibilities:

1. Where the contributed materials have been utilized to any extent to enable, verify, supplement or validate performance measurement, analysis, research or software development, to fully reference the Research Data Exchange Program and the contributions of the individuals in all subsequent and related publications or public events, specifically:
    a. In publications, reference the Research Data Exchange website and the date accessed, data and/or data processing tools (by name and version number), and the individual contributors identified on the reference template associated with each data and/or data processing tool.
    b. In presentations or other oral communication, by noting the data and/or data processing tool by name and version number, and communicating the address of the Research Data Exchange website.
2. Users are encouraged to accurately post and update within the Research Data Exchange website a description of the project utilizing the data and/or the data processing tools, including:
    a. A description of the project, including a brief statement of the project goals.
    b. A summary of the hypotheses and findings (when available) of the project.
    c. Individuals directing and/or substantively participating in the project.
    d. The name and version number of the data and/or data processing tools downloaded and utilized in the project.
    e. The current state of the project (upcoming, underway, completed).
    f. References to published materials (if any).
3. Users are encouraged to report anomalies, errors or other questionable data elements using the Data Forum of the Research Data Exchange website, referencing the specific data or data processing tool by name and version number.
4. To refrain from duplication and dissemination of the data and data processing tools to third parties.

Publication of certain derived information such as location of residence, specific stores visited, purpose of trips, etc. must be cleared with the data set originator prior to publication.

Point of Contact

Contact Information

Contact Organization Primary

Contact Organization: FHWA
Contact Person: James Colyar
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Contact Organization Secondary

Contact Organization: Cambridge Systematics, Inc.
Contact Person: Vassili Alexiadis
Contact Electronic Mail Address: valexiadis@camsys.com

National Highway Traffic Safety Administration (NHTSA) Security Information

Security Classification: Unclassified

Native Data Set Environment:

Documentation: The data are contained in eight data sets on the RDE, as follows:

1. Aerial Ortho photos (2 files in TFW and TIF format)

2. CAD diagrams (4 files in various formats)

3. Detector data (36 files in both CSV and TXT format)

4. GIS files (16 files in various formats)

5. Signal Timing (10 files in TXT format, 10 files in JPG format, 10 files in PDF format)

6. Vehicle trajectory data (2 files in both CSV and TXT format)

7. Processed video (1 file in AVI format)

8. Data analysis reports (2 files in PDF format)

Note: TXT files are the original data files; CSV files are the converted data files. To ensure proper data, use the TXT files.

Cross Reference:

The data sets and corresponding metadata for fellow NGSIM data environments (I-80 in Emeryville, CA, US 101 in Los Angeles, CA, and Peachtree Street in Atlanta, GA) are also available on the RDE.

Data Quality Information

Attribute Accuracy: No accuracy assessment has been performed for the data set.

Completeness Report: The USDOT does not make any claims regarding data completeness. There may be gaps in the data provided.

Lineage

Source Information

Source Citation
Citation Information
Originator: FHWA.
Publication Date: 2005

Process Step

Process Description: The vehicle tracking process consisted of capturing video data of a roadway, preprocessing the video images, and then extracting the vehicle trajectories from the video. The Trajectory Extraction phase involved using the NG-VIDEO software to track vehicles and put the trajectory data into a database. The disaggregate trajectory data was then processed to provide data inputs for algorithm research.

Process Contact:

Contact Information
Contact Organization Primary
Contact Organization: Cambridge Systematics
Contact Person: Vijay Kovvali
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Contact Organization: Cambridge Systematics
Contact Person: Lin Zhang
Contact Electronic Mail Address: lzhang@camsys.com

Entity and Attribute Information

Aerial Ortho Photographs

This directory contains ortho-rectified photographs of the study area.

Files:
- **LA-UniversalCity.tif**
  The aerial image file coordinates are in California State Plane Coordinate System, Zone 5, NAD83 (the units are US Survey Feet).The ortho-rectified photographs are at a resolution of 1":1000' and a pixel resolution of 0.25 feet. The photographs provide a relative accuracy of 2.5 feet. Please note that the tif file is about 800 MB in size. Due to the size of this file, problems in opening the file in some photo editors may be encountered. ArcGIS software is capable of opening the file.
- **LA-UniversalCity.tfw**
  Support for LA-UniversalCity.tif

CAD Drawings

This directory contains CAD drawings of the study area. The CAD drawings were developed using the ortho-rectified photographs

Files:

- **LA-UniversalCity.dwg**
  The dwg file provides a CAD drawing of the vehicle trajectory study area. A highly detailed representation of the network required for accurately transcribing vehicle trajectories is provided in the CAD network.
- **LA-UniversalCity-dtm.dwg**
  The dwg file provides a CAD drawing of the vehicle trajectory study area. A highly detailed representation of the network required for accurately transcribing vehicle trajectories is provided in the CAD network.
- **LA-UniversalCity.shx**
  Support for LA-UniversalCity.dwg;
- **LA-UniversalCity-Legend.jpg**
  Description for LA-UniversalCity.dwg; this file provides the legend for the data elements used in the CAD drawing (dwg file).

Data Analysis

This directory presents aggregation of vehicle trajectory results to provide common macroscopic flow parameters. The results provided in the report include aggregations of flows, speeds and number of lane changes. Aggregation is conducted by intersection and origin-destination pairs.

Files (2):

- **data-analysis-report-0830-0845.pdf**
  Contains data aggregation for 8:30 a.m. to 8:45 a.m. on June 16th, 2005 for Lankershim Boulevard in Los Angeles. Origin-destination, intersection volume, speed and headways aggregations are provided. Lane changes by origin-destinations are also provided in the data analysis report.
- **data-analysis-report-0845-0900.pdf**
  Contains data aggregation for 8:45 a.m. to 9:00 a.m. on June 16th, 2005 for Lankershim Boulevard in Los Angeles. Origin-destination, intersection volume, speed and headways aggregations are provided. Lane changes by origin-destinations are also provided in the data analysis report.

Detector Data

Wide-area detector data was collected for the Lankershim Blvd study area. These data are obtained from Los Angeles DOT's Automated Traffic Surveillance and Control (ATSAC) System. Detector data at nine intersections in and around the study area were collected for four days, from June 13 to June 16, 2005 at an aggregation of 15 minutes. Detector location information are available in the intersection images in the signal timing folder. This data set complements the vehicle trajectory data collection effort by providing information on volumes and occupancy at the vehicle trajectory study area. Please note that the turning volumes in the wide-area detector data do not match well with the trajectory data. The NGSIM team observed that the loop detectors are often over-estimating the turning volumes. The NGSIM team has not attempted to modify the raw wide-area detector data being supplied by the LADOT's ATSAC system.

Files (36):
- **DHS087-061305**
  This detector data is for the intersection at Lankershim Off-Ramp and Lankershim Blvd.
- **DHS088-061305**
  This detector data is for the intersection at Lankershim Blvd and Universal Hollywood Drive/Campo De Cahuenga Way.

- **DHS089-061305**
  This detector data is for the intersection at Lankershim Blvd and Main Street/MTA Driveway.
- **DHS090-061305**
  This detector data is for the intersection at Lankershim Blvd and James Stewart Avenue/Valley Heart Drive.
- **DHS091-061305**
  This detector data is for the intersection at Lankershim Blvd and Cahuenga Avenue.
- **DHS086-061305**
  This detector data is for the intersection at Lankershim Blvd and Cahuenga Avenue/Ventura Blvd.
- **DHS085-061305**
  This detector data is for the intersection at Ventura Blvd and Campo De Cahuenga Way.
- **DHS092-061305**
  This detector data is for the intersection at Cahuenga Blvd and Hollwood Fwy-SB Ramps/Regal Pl.
- **DHS338-061305**
  This detector data is for the intersection at Campo De Cahuenga Way and Hollywood Fwy-NB Off Ramp.
- **DHS087-061405**
  This detector data is for the intersection at Lankershim Off-Ramp and Lankershim Blvd.
- **DHS088-061405**
  This detector data is for the intersection at Lankershim Blvd and Universal Hollywood Drive/Campo De Cahuenga Way.
- **DHS089-061405**
  This detector data is for the intersection at Lankershim Blvd and Main Street/MTA Driveway.
- **DHS090-061405**
  This detector data is for the intersection at Lankershim Blvd and James Stewart Avenue/Valley Heart Drive.
- **DHS091-061405**
  This detector data is for the intersection at Lankershim Blvd and Cahuenga Avenue.
- **DHS086-061405**
  This detector data is for the intersection at Lankershim Blvd and Cahuenga Avenue/Ventura Blvd.
- **DHS085-061405**
  This detector data is for the intersection at Ventura Blvd and Campo De Cahuenga Way.
- **DHS092-061405**
  This detector data is for the intersection at Cahuenga Blvd and Hollwood Fwy-SB Ramps/Regal Pl.
- **DHS338-061405**
  This detector data is for the intersection at Campo De Cahuenga Way and Hollywood Fwy-NB Off Ramp.
- **DHS087-061505**
  This detector data is for the intersection at Lankershim Off-Ramp and Lankershim Blvd.
- **DHS088-061505**
  This detector data is for the intersection at Lankershim Blvd and Universal Hollywood Drive/Campo De Cahuenga Way.
- **DHS089-061505**
  This detector data is for the intersection at Lankershim Blvd and Main Street/MTA Driveway.
- **DHS090-061505**
  This detector data is for the intersection at Lankershim Blvd and James Stewart Avenue/Valley Heart Drive.
- **DHS091-061505**
  This detector data is for the intersection at Lankershim Blvd and Cahuenga Avenue.
- **DHS086-061505**

This detector data is for the intersection at Lankershim Blvd and Cahuenga Avenue/Ventura Blvd.

- **DHS085-061505**
This detector data is for the intersection at Ventura Blvd and Campo De Cahuenga Way.
- **DHS092-061505**
This detector data is for the intersection at Cahuenga Blvd and Hollwood Fwy-SB Ramps/Regal Pl.
- **DHS338-061505**
This detector data is for the intersection at Campo De Cahuenga Way and Hollywood Fwy-NB Off Ramp.
- **DHS087-061605**
This detector data is for the intersection at Lankershim Off-Ramp and Lankershim Blvd.
- **DHS088-061605**
This detector data is for the intersection at Lankershim Blvd and Universal Hollywood Drive/Campo De Cahuenga Way.
- **DHS089-061605**
This detector data is for the intersection at Lankershim Blvd and Main Street/MTA Driveway.
- **DHS090-061605**
This detector data is for the intersection at Lankershim Blvd and James Stewart Avenue/Valley Heart Drive.
- **DHS091-061605**
This detector data is for the intersection at Lankershim Blvd and Cahuenga Avenue.
- **DHS086-061605**
This detector data is for the intersection at Lankershim Blvd and Cahuenga Avenue/Ventura Blvd.
- **DHS085-061605**
This detector data is for the intersection at Ventura Blvd and Campo De Cahuenga Way.
- **DHS092-061605**
This detector data is for the intersection at Cahuenga Blvd and Hollwood Fwy-SB Ramps/Regal Pl.
- **DHS338-061605**
This detector data is for the intersection at Campo De Cahuenga Way and Hollywood Fwy-NB Off Ramp.

Attribute

Attribute Label: Time (Column A)
Attribute Definition: Hourly time stamp, from 12:00 A.M0. to 11:00 P.M. for each detector.
Minimum value: 0:00. Maximum Value: 23:00
Attribute Domain Values: Time (hh:mm:ss)

Attribute

Attribute Label: :00 VOL (Column B)
Attribute Definition: Provides the detector volume counts for the first 15 minutes in the hour.
Attribute Domain Values: Integer

Attribute

Attribute Label: :00 OCC (Column C)
Attribute Definition: Provides the detector occupancy for the first 15 minutes in the hour.
Represented as a percentage.
Attribute Domain Values: Integer

Attribute

Attribute Label: :15 VOL (Column D)
Attribute Definition: Provides the detector volume counts from 15 to 30 minutes in the hour.
Attribute Domain Values: Integer

Attribute

Attribute Label: :15 OCC (Column E)
Attribute Definition: Provides the detector occupancy from 15 to 30 minutes in the hour.
Represented as a percentage.
Attribute Domain Values: Integer

Attribute

Attribute Label: :30 VOL (Column F)
Attribute Definition: Provides the detector volume counts from 30 to 45 minutes in the hour.
Attribute Domain Values: Integer

Attribute

Attribute Label: :30 OCC (Column G)
Attribute Definition: Provides the detector occupancy from 30 to 45 minutes in the hour.
Represented as a percentage.
Attribute Domain Values: Integer

Attribute

Attribute Label: :45 VOL (Column H)
Attribute Definition: Provides the detector volume counts for the last 15 minutes in the hour.
Attribute Domain Values: Integer

Attribute

Attribute Label: :45 OCC (Column I)
Attribute Definition: Provides the detector occupancy for the last 15 minutes in the hour.
Represented as a percentage.
Attribute Domain Values: Integer

Attribute

Attribute Label: Hourly VOL (Column J)
Attribute Definition: Provides the detector volume counts for the full hour.
Attribute Domain Values: Integer

Attribute

Attribute Label: Hourly OCC (Column K)
Attribute Definition: Provides the detector occupancy for the full hour. Represented as a percentage.
Attribute Domain Values: Integer

Attribute

Attribute Label: Status (Column L)
Attribute Definition: Presents whether the detector is working or not. "OK" - when the detector is working, and "No Data" - when the detector is not working.
Attribute Domain Values: String

GIS Files

This directory provides geographic network data in the form of shapefiles. The files provide the geometry and attribute information for the area for which data is provided in the detector data study data set. This network includes area surrounding the vehicle trajectory study area.

Files (10):

- **LA-UniversalCity.shp**
  This file provides the geometry and attribute information of the study area.

- **LA-UniversalCity.dbf**
  Support for LA-UniversalCity.shp; this database file stores the data presented through the shapefile.
- **LA-UniversalCity.shx**
  Support for LA-UniversalCity.shp;
- **signals-and-ramp-meters.shp**
  This file presents the signs, signals and detector locations. The data are provided as points in the shapefile.
- **signals-and-ramp-meters.dbf**
  Support for signals-and-ramp-meters.shp;
- **signals-and-ramp-meters.shx**
  Support for signals-and-ramp-meters.shp;
- **camera-coverage.shp**
  This file provides the coverage of each of the five cameras. The camera number and the length of coverage are provided.
- **camera-coverage.dbf**
  Support for camera-coverage.shp;
- **camera-coverage.shx**
  Support for camera-coverage.shp;
- **LA-UniversalCity.mxd**
  This file provides an ArcView project file. The two shapefiles provided in the data set can be opened in any shapefile viewer without the need for this project file. This file is provided only for convenience purposes for those using ArcGIS software for opening the GIS files

Processed Video

This directory contains processed video data from one of the five cameras for the time period used for data reduction. The file provides video of the vehicles' positions along with a superimposition of the vehicle identification numbers and extracted vehicle dimensions and trajectories. This data is provided to users to allow cross referencing of the vehicle trajectory data with the corresponding video. This data is provided to users so that they may have a visual sense of the extracted data. The video is compressed using open-sourced XviD codec. If you are having trouble opening the file, please download the codec from http://www.koepi.org/xvid.shtml. The XviD file used for compressing the files is XviD-1.0.3-20122004.exe, a self extracting binary file.

Files:
- **lankershim-camera4-0830am-0845am-processed.avi**

Signal Timing

This directory contains timing sheets, Real-time Split Monitor (RSM) reports, and intersection images for the traffic signals present in the study area. These data were obtained from Los Angeles DOT's Automated Traffic Surveillance and Control (ATSAC) System. RSM reports contain cycle-by-cycle green split break at each controller. The Real-time Split Monitor report does not provide information about pedestrian calls.

Files:

Intersection Images (9)

- **signal-locations.jpg**
  This file provides an image with the locations of the traffic signals.
- **int085.jpg**
  This image presents the snapshot of intersection 85 provided by the Los Angeles DOT's ATSAC System. The image illustrates pavement markings and detector locations at the intersection.
- **int086.jpg**
  This image presents the snapshot of intersection 86 provided by the Los Angeles DOT's ATSAC System. The image illustrates pavement markings and detector locations at the intersection.
- **int087.jpg**
  This image presents the snapshot of intersection 87 provided by the Los Angeles DOT's Automated Traffic Surveillance and Control (ATSAC) System. The image illustrates pavement markings and detector locations at the intersection.
- **int088.jpg**
  This image presents the snapshot of intersection 88 provided by the Los Angeles DOT's ATSAC System. The image illustrates pavement markings and detector locations at the intersection.
- **int089.jpg**
  This image presents the snapshot of intersection 89 provided by the Los Angeles DOT's ATSAC System. The image illustrates pavement markings and detector locations at the intersection.
- **int090.jpg**
  This image presents the snapshot of intersection 90 provided by the Los Angeles DOT's ATSAC System. The image illustrates pavement markings and detector locations at the intersection.
- **int091.jpg**
  This image presents the snapshot of intersection 91 provided by the Los Angeles DOT's ATSAC System. The image illustrates pavement markings and detector locations at the intersection.
- **int338.jpg**
  This image presents the snapshot of intersection 338 provided by the Los Angeles DOT's ATSAC System. The image illustrates pavement markings and detector locations at the intersection.

Timing Sheets (10)

- **int085.pdf**
  This timing sheet provides the controller settings for intersection 85 - Lankershim Blvd and Cahuenga Avenue/Ventura Blvd.
- **int086.pdf**
  This timing sheet provides the controller settings for intersection 86 - Lankershim Blvd and Cahuenga Avenue/Ventura Blvd.
- **int087.pdf**
  This timing sheet provides the controller settings for intersection 87 - Lankershim Off-Ramp and Lankershim Blvd.
- **int088.pdf**
  This timing sheet provides the controller settings for intersection 88 - Lankershim Blvd and Universal Hollywood Drive/Campo De Cahuenga Way.
- **int089.pdf**
  This timing sheet provides the controller settings for intersection 89 - Lankershim Blvd and Main Street/MTA Driveway.

- **int090.pdf**
  This timing sheet provides the controller settings for intersection 90 - Lankershim Blvd and James Stewart Avenue/Valley Heart Drive.
- **int091.pdf**
  This timing sheet provides the controller settings for intersection 91 - Lankershim Blvd and Cahuenga Avenue.
- **int092.pdf**
  This timing sheet provides the controller settings for intersection 92 - Cahuenga Blvd and Hollwood Fwy-SB Ramps/Regal Pl.
- **int338.pdf**
  This timing sheet provides the controller settings for intersection 338 - Campo De Cahuenga Way and Hollywood Fwy-NB Off Ramp.
- **int339.pdf**
  This timing sheet provides the controller settings for intersection 339 - Campo De Cahuenga Way and MTA Driveway.

RSM Reports (10)

- **RSM087-061605**
  This RSM report is for the intersection at Lankershim Off-Ramp and Lankershim Blvd.
- **RSM088-061605**
  This RSM report is for the intersection at Lankershim Blvd and Universal Hollywood Drive/Campo De Cahuenga Way.
- **RSM089-061605**
  This RSM report is for the intersection at Lankershim Blvd and Main Street/MTA Driveway.
- **RSM090-061605**
  This RSM report is for the intersection at Lankershim Blvd and James Stewart Avenue/Valley Heart Drive.
- **RSM091-061605**
  This RSM report is for the intersection at Lankershim Blvd and Cahuenga Avenue.
- **RSM086-061605**
  The RSM report is for the intersection at Lankershim Blvd and Cahuenga Avenue/Ventura Blvd.
- **RSM085-061605**
  This RSM report is for the intersection at Ventura Blvd and Campo De Cahuenga Way.
- **RSM092-061605**
  This RSM report is for the intersection at Cahuenga Blvd and Hollwood Fwy-SB Ramps/Regal Pl.
- **RSM338-061605**
  This RSM report is for the intersection at Campo De Cahuenga Way and Hollywood Fwy-NB Off Ramp.
- **RSM339-061605**
  This RSM report is for the intersection at Campo De Cahuenga Way and MTA Driveway. Intersection diagram and detector information are not available for this intersection.

Attribute

Attribute Label: TIME
Attribute Definition: *Refer to intersection signal timing sheet.*
Attribute Domain Values: Time (hh:mm:ss)

Attribute

Attribute Label: TP
Attribute Definition: *Refer to intersection signal timing sheet.*
Attribute Domain Values: Integer

Attribute

Attribute Label: ST
Attribute Definition: *Column appear blank for all files*
Attribute Domain Values: Integer

Attribute

Attribute Label: CYC
Attribute Definition: Cycle length in seconds
Attribute Domain Values: Integer

Attribute

Attribute Label: OFS
Attribute Definition: *Refer to intersection signal timing sheet.*
Attribute Domain Values: Integer

Attribute

Attribute Label: 1
Attribute Definition: *Refer to intersection signal timing sheet.*
Attribute Domain Values: Integer

Attribute

Attribute Label: 2
Attribute Definition: *Refer to intersection signal timing sheet.*
Attribute Domain Values: Integer

Attribute

Attribute Label: 3
Attribute Definition: *Refer to intersection signal timing sheet.*
Attribute Domain Values: Integer

Attribute

Attribute Label: 4
Attribute Definition: *Refer to intersection signal timing sheet.*
Attribute Domain Values: Integer

Attribute

Attribute Label: 5
Attribute Definition: *Refer to intersection signal timing sheet.*
Attribute Domain Values: Integer

Attribute

Attribute Label: 6
Attribute Definition: *Refer to intersection signal timing sheet.*
Attribute Domain Values: Integer

Attribute

Attribute Label: 7
Attribute Definition: *Refer to intersection signal timing sheet.*
Attribute Domain Values: Integer

Attribute

Attribute Label: 8
Attribute Definition: *Refer to intersection signal timing sheet.*
Attribute Domain Values: Integer

Vehicle Trajectory Data

Vehicle trajectory data was collected on Lankershim Boulevard in Los Angeles, California on June 16, 2005. The files contain transcribed data from 8:28 a.m. to 8:45 a.m., and 8:45 a.m. to 9:00 a.m. This data was collected using five video cameras mounted on a 36-story building, 10 Universal City Plaza, which is located adjacent to the arterial study area in the Universal City neighborhood. Vehicle trajectory data were transcribed from the video data using a customized software application, Next Generation Vehicle Interaction and Detection Environment for Operations (NG-VIDEO), developed for NGSIM. This program was used to automatically detect and track most vehicles from the video images and transcribe the trajectory data to a database. Manual transcription was used to track any vehicles which failed to be automatically detected and tracked. The data provides X, Y coordinates of each vehicle, every 1/10th of a second in relative space and in the California State Plane Coordinate System, Zone 5, NAD83 (the units are US Survey Feet). Time is given in Epoch time, which is the elapsed time since midnight (beginning of the calendar day) GMT on January 1, 1970 in milliseconds. This elapsed epoch time must be shifted to the US Pacific time zone for comparisons to local time at the highway. The bounds for the data are west: -118.363, east: -118.360, north: 34.143, and south: 34.137. During the data collection period, no traffic incidents were recorded within the study area or on any adjacent locations likely influencing traffic in the study area.

Files:

- **trajectories-0830am-0845am**
  This file contains all vehicle trajectories for the specified time period, sorted by time. The X accuracy of this data set is estimated at around 2 feet and the Y accuracy is estimated at around 4 feet. The start time for the trajectory data set corresponds to 8:27:34 a.m. in the Real-time Split Monitor (RSM) report.

- **trajectories-0845am-0900am**
  This file contains all vehicle trajectories for the specified time period, sorted by time. The X accuracy of this data set is estimated at around 2 feet and the Y accuracy is estimated at around 4 feet. The start time for the trajectory data set corresponds to 8:44:34 a.m. in the Real-time Split Monitor (RSM) report.

Attribute

Attribute Label: Vehicle_ID (Column A)
Attribute Definition: Vehicle identification number (ascending by time of entry into section)
Attribute Domain Values: Integer

Attribute

Attribute Label: Frame_ID (Column B)
Attribute Definition: Frame Identification number (ascending by start time)
Attribute Domain Values: Integer

Attribute

Attribute Label: Total_Frames (Column C)
Attribute Definition: Total number of frames in which the vehicle appears in this data set.
Attribute Domain Values: Integer

Attribute

Attribute Label: Global_Time (Column D)
Attribute Definition: Elapsed time in milliseconds since Jan 1, 1970 (Epoch time).
Attribute Domain Values: Integer

Attribute

Attribute Label: Local_X (Column E)
Attribute Definition: Lateral (X) coordinate of the front center of the vehicle - perpendicular to the median of the Lankershim Boulevard. Measured in feet. Vehicles traveling on the east side of the

median have positive Local X values, while those traveling on the west side of the median have negative Local X values.
Attribute Domain Values: Double

Attribute

Attribute Label: Local_Y (Column F)
Attribute Definition: Longitudinal (Y) coordinate of the front center of the vehicle along the median of the Lankershim Boulevard. Measured in feet. The start point is at the southern boundary of the study area.
Attribute Domain Values: Double

Attribute

Attribute Label: Global_X (Column G)
Attribute Definition: X Coordinate of the front center of the vehicle based on CA State Plane III in NAD83. Measured in feet.
Attribute Domain Values: Double

Attribute

Attribute Label: Global_Y (Column H)
Attribute Definition: Y Coordinate of the front center of the vehicle based on CA State Plane III in NAD83. Measured in feet.
Attribute Domain Values: Double

Attribute

Attribute Label: v_Length (Column I)
Attribute Definition: Length of vehicle in feet.
Attribute Domain Values: Double

Attribute

Attribute Label: v_Width (Column J)
Attribute Definition: Width of vehicle in feet
Attribute Domain Values: Double

Attribute

Attribute Label: v_Class (Column K)
Attribute Definition: Vehicle type: 1 - motorcycle, 2 - auto, 3 - truck
Attribute Domain Values: Integer

Attribute

Attribute Label: v_Vel (Column L)
Attribute Definition: Instantaneous velocity of vehicle (feet/second).
Attribute Domain Values: Double

Attribute

Attribute Label: v_Acc (Column M)
Attribute Definition: Instantaneous acceleration of vehicle (feet/second square).
Attribute Domain Values: Double

Attribute

Attribute Label: Lane_ID (Column N)
Attribute Definition: Current lane position of vehicle. Lane numbering is incremented from the left-most lane, except for locations where left-turn or right-turn bays exist. Left-turn bays are numbered starting from 11 and are incremented from the left-most left-turn bay. Right-turn bays are numbered starting from 31 and are incremented from the left-most right-turn bay. It is noted that there is a left-turn bay in the mid-block between intersections 3 and 4. To differentiate that left-turn bay with others, it is numbered 101.
Attribute Domain Values: Integer

Attribute

Attribute Label: O_Zone (Column O)

Attribute Definition: Origin zones of the vehicles, i.e., the place where the vehicles enter the tracking system. There are 11 origins in the study area, numbered from 101 through 111. Please refer to the data analysis report for more detailed information.
Attribute Domain Values: Integer

Attribute

Attribute Label: D_Zone (Column P)
Attribute Definition: Destination zones of the vehicles, i.e., the place where the vehicles exit the tracking system. There are 10 destinations in the study area, numbered from 201 through 211. Origin 102 is a one-way off-ramp; hence there is no associated destination number 202. Please refer to the data analysis report for more detailed information.
Attribute Domain Values: Integer

Attribute

Attribute Label: Int_ID (Column Q)
Attribute Definition: Intersection in which the vehicle is traveling. Intersections are numbered from 1 to 4, with intersection 1 at the southernmost, and intersection 4 at the northernmost section of the study area. Value of "0" means that the vehicle was not in the immediate vicinity of an intersection and that the vehicle instead identifies with a section of Lankershim Boulevard (Section_ID, below). Please refer to the data analysis report for more detailed information.
Attribute Domain Values: Integer

Attribute

Attribute Label: Section_ID (Column R)
Attribute Definition: Section in which the vehicle is traveling. Lankershim Blvd is divided into five sections (south of intersection 1; between intersections 1 and 2, 2 and 3, 3 and 4; and north of intersection 4). Value of "0" means that the vehicle does not identify with a section of Lankershim Boulevard and that the vehicle was in the immediate vicinity of an intersection (Int_ID above). Please refer to the data analysis report for more detailed information.
Attribute Domain Values: Integer

Attribute

Attribute Label: Direction (Column S)
Attribute Definition: Moving direction of the vehicle. 1 - east-bound (EB), 2 - north-bound (NB), 3 - west-bound (WB), 4 - south-bound (SB).
Attribute Domain Values: Integer

Attribute

Attribute Label: Movement (Column T)
Attribute Definition: Movement of the vehicle. 1 - through (TH), 2 - left-turn (LT), 3 - right-turn (RT).
Attribute Domain Values: Integer

Attribute

Attribute Label: Preceding (Column U)
Attribute Definition: Vehicle Id of the lead vehicle in the same lane. A value of '0' represents no preceding vehicle.
Attribute Domain Values: Integer

Attribute

Attribute Label: Following (Column V)
Attribute Definition: Vehicle Id of the vehicle following the subject vehicle in the same lane. A value of '0' represents no following vehicle.
Attribute Domain Values: Integer

Attribute

Attribute Label: Space_Headway (Column W)
Attribute Definition: Space Headway. Provides the distance between the front-center of a vehicle to the front-center of the preceding vehicle. Measured in feet.
Attribute Domain Values: Double

Attribute
Attribute Label: Time_Headway (Column X)
Attribute Definition: Time Headway. Provides the time to travel from the front-center of a vehicle (at the speed of the vehicle) to the front-center of the preceding vehicle. A headway value of 9999.99 means that the vehicle is traveling at zero speed (congested conditions). Measured in seconds.
Attribute Domain Values: Double

Distribution Information

Distributor

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Metadata Reference Information
Metadata Date: 20160328
Metadata Review Date: 20160328
Metadata Future Review Date: not scheduled

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